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ABSTRACT

Research has produced mixed results in evaluating whether people are influenced more by computer output than by other information. The present study examined how teachers' perceptions of psychological reports differ when the reports are identified as being produced by a computer program or by a school psychologist. Subjects were 40 experienced teachers and 55 teacher trainees enrolled in workshops relating to psychological reports. Results revealed a significant effect of report source on subjects' evaluation of the report. Computer reports were rated significantly higher than psychologist reports. Evaluation of the reports was also affected by the number of errors the subject reported seeing. Two or more errors reported led to significantly lower ratings. Gender, amount of teaching experience, number of testing courses, and amount of computer experience were not related to report ratings. Contains 10 references. (Author)

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Computer-generated psychological reports
and teachers' decision making

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Abstract

Research has produced mixed results in evaluating whether people are influenced more by computer output than by other information (e.g., Andrews & Gutkin, 1991; Crimando & Bordieri, 1991; Dannenberg, Shapiro, & Fries, 1985; Evans, 1989; Gahm, 1986; Honaker, Hector, & Harrell, 1986; Rubenzer, 1992). The present study examined how teachers' perceptions of psychological reports differ when the reports are identified as being produced by a computer program or by a school psychologist. Results revealed a significant effect of report source on subjects' evaluation of the report. Computer reports were rated significantly more highly than psychologist reports. Evaluation of the reports was also affected by the number of errors the subject reported seeing. Two or more errors reported led to significantly lower ratings. Gender, amount of teaching experience, number of testing courses, and amount of computer experience were not related to report ratings.

Introduction

Research has produced mixed results in evaluating whether people are influenced more by computer output than by other information (e.g., Andrews & Gutkin, 1991; Crimando & Bordieri, 1991; Dannenberg, Shapiro, & Fries, 1985; Evans, 1989; Gahm, 1986; Honaker, Hector, & Harrell, 1986). School psychology, like many fields, uses computers in a wide variety of ways. Test scoring and interpretation is one common use (McCullough & Wenck, 1984). However, test interpretation software is still primitive, producing only a list of hypotheses for a given set of scores. There is not yet an expert system that can use heuristics to actually make decisions. If computer-generated reports are more influential than a trained professional, this could lead to serious problems. Teachers are often expected to read and use psychological reports. However, they generally have little training in psychological assessment, and so might be more susceptible to

the influence of an expert in that field. If the computer is erroneously accepted as an expert, this undue influence might adversely affect educational decisions made by teachers. The present study examined how teachers' perceptions of psychological reports differ when the reports are identified as being produced by a computer program or by a school psychologist.

Subjects were 40 experienced teachers and 55 teacher trainees who enrolled in workshops on "Understanding and Interpreting Psychological Reports." Subjects read and rated a psychological report, made a placement decision for the child described, and provided demographic information. Subjects were randomly assigned to one of four report conditions. An accurate report of a psychoeducational assessment was attributed to either a computer program or a school psychologist, and a report which contained various errors was attributed to the computer program or the psychologist.

The Report Evaluation Form consisted of 12 Likert-like items rating the report on a scale of one to seven. It was found to be a reliable measure (Cronbach's Coefficient Alpha of 0.80). Factor analysis revealed that it was a unitary measure, and total scores correlated significantly (0.56) with ratings of how much report information was used in making a placement decision for the child described. The mean of the twelve ratings was used as the Evaluation score, a measure of report quality.

Results

Regression analysis revealed that two independent variables contributed significantly ($p < 0.014$) to the variance in the Evaluation score: the Source of the report and the number of errors the subject reported seeing in the report. The Computer reports were rated significantly higher than the Psychologist reports. The Computer reports received a mean Evaluation score of 5.32, while the Psychologist reports received a mean Evaluation score of 4.91 ($p < 0.03$).

Evaluation of the reports was also affected by the number of errors that the subject reported seeing. Subjects who reported seeing no errors or one error gave the report a mean Evaluation score of 5.26, while subjects who reported seeing two or more errors gave the report a mean Evaluation score of 4.54 ($p < 0.0012$). Most subjects reported seeing only one error, where the child's gender was identified incorrectly in one paragraph. Subjects with more teaching experience, and subjects who had completed one or more testing classes, reported seeing more errors.

The Evaluation score was not affected by the subject's gender or by the personality measures of locus of control or self-rating as intuitive or rational. Further, the Evaluation score was not affected by amount of teaching experience or number of testing courses reported, when the number of reported errors was in the model, although they did have a significant effect when in the model alone. Much of the effect of teaching experience was actually due to differing numbers of testing courses. The major result of an increased number of testing courses was an increase in the number of errors reported.

Discussion

This study was conducted to investigate the influence of computers and the influence of school psychologists via a written report on teachers' decision making.

The source of the report was related to the Evaluation score, in the hypothesized direction. Reports attributed to a computer were rated more highly than the same reports attributed to a psychologist. This finding lends credence to the fears of those who claim that people may be unduly influenced by computers. Simply attributing a report to a computer increases its credibility with consumers. This is worrisome, especially in an age when computer-based test interpretation is burgeoning and increasing numbers of computer reports are being produced.

The American Psychological Association tries to protect consumers by requiring interpretation of test results by professionals. For example, the Standards for Educational and Psychological Testing (APA, 1985) states that (Standard 6.13):

Test users should not use interpretations of test results, including computer-interpreted test results, unless they have a manual for that test that includes information on the validities of the interpretations for the intended applications and on the samples on which they are based....Considerable professional judgment is needed to use computer-based interpretations appropriately. (p.44)

Unfortunately, software companies are not necessarily bound by codes of ethics, and results may end up in the hands of people who do not have the training or experience to correctly interpret those results.

Evaluation scores were not significantly affected by the accuracy of the report. Evaluation scores were significantly affected by the number of errors the subjects actually reported seeing, however. Noticing one error did not affect ratings. This may have been seen as a simple typographical error which did not affect the accuracy of the report. However, noticing two or more errors did result in subjects rating the report more harshly. Only four subjects reported seeing three or four errors, so most errors were not noticed at all. More testing classes did help people catch errors, but many people who are likely to depend on reports (such as parents) have little assessment training.

The findings of this study have clear implications for the practice of school psychology. School psychologists who choose to use computer-based test scoring, interpretation, or report-writing software must be careful to fully evaluate it. In addition, computer-generated reports should not be circulated directly to teachers, both because of concerns about their validity in

general and because of a tendency for teachers to judge those reports with less severity than professional reports. Computer-generated reports should be used by professionals who can judge their accuracy and relevance in a given case. These recommendations are in keeping with APA (1985) standards, as well. In addition, consulting with teachers, rather than simply writing a report, will allow the school psychologist greater opportunities to correct misconceptions and clarify the limitations of the assessment results. Specific training for teachers might address the possibility of bias towards computer-generated reports, although specific research is needed to determine what components and types of training would be effective.

Despite its limitations, most notably the restricted sample, this study raises important issues. The fact that consumers of psychological reports are less critical of computer-generated reports under some circumstances than of reports written by psychologists has important implications for modern society. At a time when experts are questioning what computers should do, as well as what they can do (e.g., Weizenbaum, 1976), it is troubling that, regardless of content, some people will accept computer output less critically simply because it is produced by a computer.

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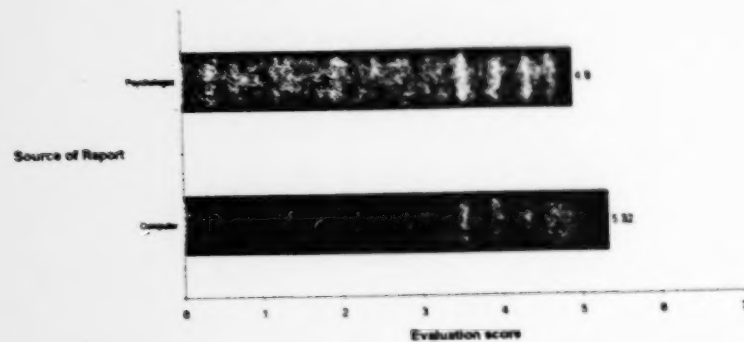
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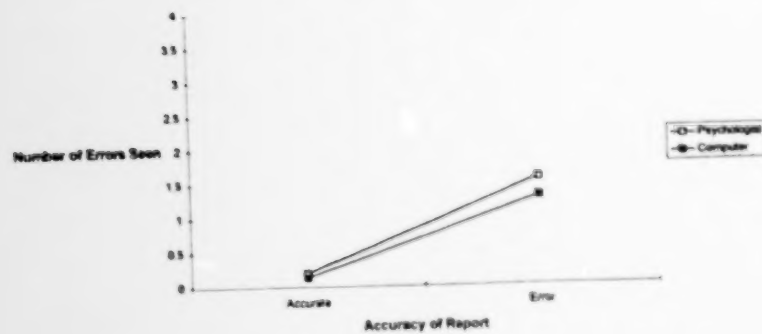
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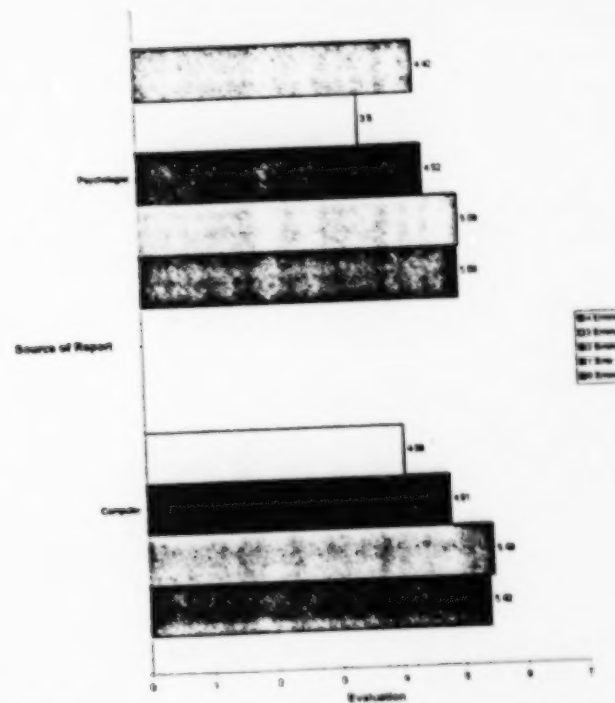
Evaluation of Report by Source of Report



Average Number of Errors Seen by Accuracy of Report and Source of Report



Evaluation of Report by Source of Report and Number of Errors Seen in Report



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